CLAIM AMENDMENTS

1. (Currently Amended) A semiconductor device comprising:

a substrate;

a gate insulating film ~~formed~~ on said substrate, and ~~having~~ including one of a nitrogen-containing metal silicate film ~~or~~ and a nitrogen-containing metal aluminate film that contains a metal in a peak concentration ~~of 1~~ in a range from one atomic % ~~or more and 30~~ to thirty atomic % ~~or less~~ on the uppermost layer; and

a gate electrode ~~formed~~ on said gate insulating film.

2. (Currently Amended) A semiconductor device comprising:

a substrate;

a gate insulating film ~~formed~~ on said substrate, and ~~having~~ including:

a base interface layer ~~formed~~ on said substrate,

a metal silicate film ~~formed~~ on said base interface layer, and containing a metal, oxygen, and silicon, and

a nitrogen-containing metal silicate film that contains a metal, oxygen, silicon, and nitrogen; and

a gate electrode ~~formed~~ on said gate insulating film, wherein said nitrogen-containing metal silicate film contains said metal in a peak concentration ~~of 1~~ in a range from one atomic % ~~or more and 30~~ to thirty atomic % ~~or less~~.

3. (Currently Amended) The semiconductor device according to claim 2, wherein said metal silicate film contains said metal in a peak concentration ~~of 5~~ in a range from five atomic % ~~or more and 40~~ to forty atomic % ~~or less~~.

4. (Currently Amended) The semiconductor device according to claim 1, wherein said nitrogen-containing metal silicate film contains said nitrogen in a peak concentration ~~of 10~~ in a range from ten atomic % ~~or more and 30~~ to thirty atomic % ~~or less~~.

5. (Currently Amended) A method ~~for~~ of manufacturing a semiconductor device comprising ~~the steps for~~:

forming a base interface layer on a substrate;

forming a metal silicate film containing a metal in a peak concentration ~~of 1~~ in a range from one atomic % ~~or more and 30~~ to thirty atomic % ~~or less~~ on said base interface layer;

forming a nitrogen-containing metal silicate film containing nitrogen in a peak concentration ~~of 10~~ in a range from ten atomic % ~~or more and 30~~ to thirty atomic % ~~or less~~ on ~~the upper layer of~~ said metal silicate film; and

forming a gate electrode on said nitrogen-containing metal silicate film.

6. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor device according to claim 5, wherein

~~said step for~~ forming said metal silicate film ~~performs the combination of~~ includes, repeatedly:

~~a first step for~~ forming a metal oxide film by supplying a metal-containing material, and then supplying an oxygen-based gas ~~onto~~ to said substrate; and

~~a second step for~~ forming a silicon oxide film by supplying a silicon-containing material, and then supplying an oxygen-based gas ~~onto~~ to said substrate; and

~~said step for~~ forming said metal silicate film ~~performs said combination of steps~~ includes controlling the number of ~~said first and second steps~~ cycles of forming said metal oxide film and forming said silicon oxide film.

7. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor device according to claim 6, ~~wherein said first step~~ including repeatedly ~~performs the steps for~~ forming said metal oxide film by:

supplying said metal-containing material ~~onto~~ to said substrate;

supplying said oxygen-based gas ~~onto~~ to said substrate; and

radiating ~~light onto~~ the surface of said substrate with light for ~~a time~~ up to several milliseconds.

8. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor device according to claim 6, ~~wherein said second step~~ including repeatedly ~~performs the steps for~~ forming said silicon oxide film by:

supplying said silicon-containing material ~~onto~~ to said substrate;

supplying said oxygen-based gas ~~onto~~ to said substrate; and

radiating ~~light onto~~ the surface of said substrate with light for ~~a time~~ up to several milliseconds.

9. (Currently Amended) A method ~~for~~ of manufacturing a semiconductor device comprising ~~the steps for~~:

forming a base interface layer on a substrate;

forming a metal silicate film containing a metal in a peak concentration ~~of 5~~ in a range from five atomic % ~~or more and 40~~ to forty atomic % ~~or less~~ on said base interface layer;

forming a nitrogen-containing metal silicate film containing a metal in a peak concentration ~~of 1~~ in a range from one atomic % ~~or more and 30~~ to thirty atomic % ~~or less~~ and nitrogen in a peak concentration ~~of 10~~ in a range from ten atomic % ~~or more and 30~~ to thirty atomic % ~~or less~~ on said metal silicate film; and

forming a gate electrode on said nitrogen-containing metal silicate film.

10. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor device according to claim 9, wherein

~~said step for~~ forming said metal silicate film ~~performs the combination of~~ includes, repeatedly:

~~a first step for~~ forming a metal oxide film by supplying a metal-containing material, and then supplying an oxygen-based gas ~~onto~~ to said substrate; and

~~a second step for~~ forming a silicon oxide film by supplying a silicon-containing material, and then supplying an oxygen-based gas ~~onto~~ to said substrate; and

~~said step for~~ forming said metal silicate film ~~performs said combination of steps~~ includes controlling the number of ~~said first and second steps~~ cycles of forming said metal oxide film and forming said silicon oxide film.

11. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor device according to claim 10, ~~wherein said first step~~ including repeatedly ~~performs the steps for~~ forming said metal oxide film by:

supplying said metal-containing material ~~onto~~ to said substrate;

supplying said oxygen-based gas ~~onto~~ to said substrate; and

radiating ~~light onto~~ the surface of said substrate with light for ~~a time~~ up to several milliseconds.

12. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor device according to claim 10, ~~wherein said second step~~ including repeatedly ~~performs the steps for~~ forming said silicon oxide film by:

supplying said silicon-containing material ~~onto~~ to said substrate;

supplying said oxygen-based gas ~~onto~~ to said substrate; and

radiating ~~light onto~~ the surface of said substrate with light for ~~a time~~ up to several milliseconds.

13. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor device according to claim 9, wherein ~~said step for~~ forming said nitrogen-containing metal silicate film comprises ~~the steps for~~:

forming a base metal silicate film containing a metal in a peak concentration ~~of 1~~ in a range from one atomic % ~~or more and 30~~ to thirty atomic % ~~or less~~; and

introducing nitrogen into said base metal silicate film in a peak concentration ~~of 10~~ in a range from ten atomic % ~~or more and 30~~ to thirty atomic % ~~or less~~ by nitriding said metal silicate film.

14. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor device according to claim ~~5~~ 13, wherein~~:~~

~~said step for~~ forming a base metal silicate film ~~performs the combination of;~~ includes:

a first step for forming a metal oxide film by supplying a metal-containing material, and then supplying an oxygen-based gas onto said substrate; and

a second step for forming a ~~metal~~ silicon oxide film by supplying a silicon-containing material, and then supplying an oxygen-based gas onto said substrate; and

~~controls~~ controlling the number of ~~said first and second steps to~~ cycles of forming said metal oxide film and forming said silicon oxide film to form said metal silicate film.

15. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor device according to claim 14, ~~wherein said first step~~ including repeatedly ~~performs the steps for~~ forming said metal oxide film by:

supplying said metal-containing material ~~onto~~ to said substrate;

supplying said oxygen-based gas ~~onto~~ to said substrate; and

radiating ~~light onto~~ the surface of said substrate with light for ~~a time~~ up to several milliseconds.

16. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor device according to claim 14, ~~wherein said second step~~ including repeatedly ~~performs the steps for~~ forming said silicon oxide film by:

supplying said silicon-containing material ~~onto~~ to said substrate;

supplying said oxygen-based gas ~~onto~~ to said substrate; and

radiating ~~light onto~~ the surface of said substrate with light for ~~a time~~ up to several milliseconds.

17. (Currently Amended) ~~A~~An apparatus for forming a film comprising:

a housing;

a table installed in said housing, for ~~placing~~ supporting a substrate;

a gas supply port for supplying a gas into said housing;

a gas discharge port for discharging the gas in said housing ~~out of~~ from said housing; and

a heater for heating the surface of ~~said~~ a substrate supported on said table by radiating light on to the surface of ~~said~~ the substrate placed on said table for ~~a time~~ up to several milliseconds.

18. (Original) The apparatus for forming a thin film according to claim 17 wherein said heater includes a flash lamp.

19. (Currently Amended) A method ~~for~~ of forming a high-dielectric-constant film on a substrate comprising ~~the steps for~~:

supplying a first ~~material~~ source gas that contains at least one element ~~in~~ of elements constituting ~~said~~ a high-dielectric-constant film into a housing ~~wherein said~~ where a substrate is ~~placed~~ located;

supplying a second ~~material~~ source gas ~~that reacts~~ into the housing, the second source gas reacting with said first ~~material~~ source gas and ~~forms said~~ forming the high-dielectric-constant film ~~into said housing~~; and

heating the surface of ~~said~~ the substrate by radiating ~~light onto~~ the surface of ~~said~~ the substrate with light for ~~a time~~ up to several milliseconds.

20. (Currently Amended) The method for forming a high-dielectric-constant film according to claim 19, ~~wherein the time for~~ including radiating the substrate with light ~~in said heating step is from~~ for a time in a range of 0.8 to 20 miliseconds.